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EARTHWORMS FOR BAIT

Earthworms are known by many names, among which are angleworms, dewworms, night crawlers, fishworms, red worms, and rain worms. For centuries anglers have used them as a lure for fresh-water fishes. As early as 1496 there was published in England in the Book of St. Albans an article entitled Fysshynge wyth an Angle, by Julia Berners, a Benedictine nun. The article gave explicit instructions as to the best kinds of worms to use for bait, and where to search for them.

The common earthworm has been a favorite type for illustrating the anatomy and physiology of annelids, in the teaching of zoological principles to high school and college students. The earthworms considered in this paper belong to the family Lumbricidae and live in the soil. The common earthworm is known as Lumbricus terrestris. In many parts of the country, however, the species Allolobophora (Helodrilus) longa or one of the species of Diplocardia are more abundant than L. terrestris. Earthworms thrive in almost all kinds of soil but do best in those containing organic matter. They are especially plentiful in old lawns and wild grasslands.

METHODS OF COLLECTING EARTHWORMS

A common method of obtaining earthworms for bait is to turn over the soil with a shovel, garden fork, or mattock. Their burrows are often well concealed, and the entrance is sometimes plugged with leaves, seeds, twigs, or even pebbles. During the more humid portions of the year earthworms come out of their tunnels to the surface of the soil to feed and to mate, and probably to migrate. They emerge also during rainstorms at night and have been known to travel considerable distances. They are rarely on the surface when high winds prevail. Earthworms may be gathered on the surface after dark in clear weather on almost any piece of fertile soil, particularly under large trees, with the aid of a lantern or flashlight with the light subdued with a piece of cloth or tissue paper. A good light for the purpose is a flashlight fitted with a red glass or a lantern with a red globe. During dry weather earthworms descend more deeply into the soil. At such times they may be brought to the surface after dark by sprinkling

the ground around their burrows thoroughly with a garden hose just before sundown. If the temperature falls much below 40°F., however, they will not come to the surface when the area is wetted down, and it will be necessary to dig them out. Compost heaps or soil receiving the dish-water or drains from the kitchen sink should not be overlooked.

Earthworms are sensitive to vibrations, and some of the worms in an area may emerge from their burrows if the soil surface is tapped. Another procedure is to find an area where earthworms are known to be, drive a stick into the soil to a depth of about 10 inches, and knock on the side of the stick until the worms come up. By drawing a board or the side of an axe back and forth across the end of the stick, a vibration is set up in the surrounding soil, and in ideal situations such a vibration has caused earthworms to come to the surface as far as 25 or 30 feet from the post. This method of collecting earthworms is known locally as "fiddlin" or "grunting."

RAISING AND STORING EARTHWORMS OUTDOORS

A container for propagating earthworms may be constructed of tongue and groove material. A tight box 36 by 60 by 18 inches will serve very well for several hundred worms. If the exterior is well tarred, the box will last much longer in the soil. The inside of the container may be waterproofed by painting with hot paraffin. The lid should be constructed so as to project several inches over the sides of the box to prevent flooding in a heavy rain. Select a cool, shady place in a well-drained area, and embed the box in the soil with 2 or 3 inches projecting above the surface. Earthworms will rarely survive in a temperature above 75°F.

Fill the box with fertile soil that is damp but not wet, and stock with worms. Sandy soils should not be used. Sod may be laid over the soil if desired, but an excellent covering consists of decayed leaves or compost, which forms a considerable part of the natural food of earthworms. The richer the soil in humus, the better, because earthworms require less artificial food in rich soil. In dry weather the soil in the box should be moistened, but care should be taken not to saturate it. Earthworms will live a long time under these conditions, but it is desirable to feed them occasionally by adding a little chopped beef suet, a small quantity of sugar, syrup, sour milk, or a little dish-water.

If a compost heap is maintained, it can be stocked with worms if they are not already present. The worms will flourish in the soil around its base, and worms will be provided throughout the year with very little attention.

RAISING EARTHWORMS INDOORS

Earthworms may be raised in a galvanized wash tub, a metal drum cut lengthwise, or any other water-tight container placed in a garage, basement, or vacant room. The container used should be painted on the inside with hot asphalt, acid-proof paint, or two coats of any good paint which will

prevent rust. A tub 2 feet in diameter and 10 inches deep, fully utilized, should produce from 3,500 to 6,000 earthworms of fishing-size per year. The earthworm found most suitable for raising in tubs is the small red worm, or manure worm, commonly found around manure or compost piles. This species is known as the "Brandling" in Great Britain, where it is an especial favorite of trout fishermen. These worms are prolific and, in addition, will live under a wider variety of conditions than most other species. They mature in about 6 months but are large enough to use for bait in about 3 months.

Fill the tub with fertile soil to a depth of about 8 inches. Add sufficient water to make the soil moist throughout. Take 1 pound of cornmeal and 1/2 pound of vegetable shortening or lard and mix with the top 2 or 3 inches of soil. Put in 100 or more red worms, and cover the soil with a burlap bag or strips of wood to delay evaporation of the moisture. Each tub of worms will require about 1 pound of vegetable shortening and 2 pounds of cornmeal for food each month. If larger containers are used, more food will be required. The food should be placed on the surface of the soil every 2 weeks. After the tubs have been started, the addition of water at the time the food is added should be sufficient. The soil should be kept moist but not wet. One author recommends the use of 5 gallons of dry coffee grounds mixed with enough soil to fill an ordinary tub two-thirds full. Wet coffee grounds should be sprinkled on daily, with dried cracked wheat and bread crumbs. An occasional sprinkling with sour milk or dishwater is beneficial.

The lard and cornmeal diet may attract mites, ants, rats, or mice. The mites may be controlled by lightly dusting the surface of the soil with sulphur. Ants may be kept out by supporting the tubs on legs placed in oil, or by dusting the floor around the tub occasionally with pyrethrum or an insecticide containing roetenone. The tub should be covered with hardware cloth if rats and mice attempt to pilfer it.

PREPARATION OF EARTHWORMS FOR MARKET

Earthworms are often marketed freshly dug from the ground, but they will live longer on the hook if "scoured" in a stoneware crock or wooden box. The scouring process is carried out by placing the worms in a quantity of sphagnum moss, such as is used by nurserymen in packing plants for shipment. Excess moisture should be wrung out of the moss before placing it in the container. Keep the worms in the moss in a cool place for 2, or preferably 3 or 4 days. At the end of this period, the worms will be almost transparent but tough and lively. If it is necessary to leave them a week or longer in the moss, a little fresh milk should be poured over them at intervals of a week, but the moss should be rinsed out in clean water every week or 10 days.

THE BAIT BOX

Keeping earthworms alive and in good condition while fishing in the heat of the sun requires a suitable bait box. A satisfactory one may be

made at home from galvanized iron and lined with 1/4-inch sheet cork. The lining should be given two heavy coats of collodion or paraffin to make it waterproof and keep it sanitary. Encase the box in a canvas jacket, laced on so that it may be removed for cleaning. In use, the jacket is kept wet and the evaporation from it, by absorption of heat, keeps the interior of the box cool.

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